

SUMMARY OF FINDINGS ON SEVEN (7) SOUND SEGMENT TEST TAPE

The seven sound segment test tape was given to forty-six subjects in the lab during the Spring and Summer of 1984. GSR changes during each sound segment and subjective comments made by each subject at the end of each segment were recorded and coded, and are summarized in this report.

A serious error was made during the test runs. For a short period, the speed on the recorder playing the taped segments was altered from $3\frac{3}{4}$ to $7\frac{1}{2}$. This change was not noted for some time, so that the exact number of tests played at the incorrect speed is not known. Our best guess is that six to ten tests were involved. The impact of this speed change on the GSR ratings and subjective experiences is difficult to estimate since although the pitch of the sound was raised, the hertz differential was not affected.

In this report, a summary description of GSR changes and subjective comments is presented for each sound segment separately. Then, a comparison of the seven segments is reported, along with the tables that make the comparison possible.

SOUND SEGMENT 1 - 12(800)

1. GSR changes (Table I)

Increases: range 0-5, mean 1.8 with n=26

Decreases: range 0-4, mean 1.5 with n=20

Nine percent of subjects had their largest GSR change on this segment.
(Table 2)

2. Only 2% of subjects liked this segment best, had their best experience or thought this segment to have most potential. (Table 3)
3. 26% of Ss found this segment pleasant, 30% unpleasant. (Table 4)
4. 15% found the sound comfortable, 20% uncomfortable. (Table 4)
5. 21% found the sound annoying, 19% found the sound relaxing, 15% stimulating. (Table 4)
6. Body sensations during segment 1. (Table 5)
 - a. Most subjects reported sensations in head or torso.
 - b. Sensations most frequently reported were tingle/twitch/jerk or pressure/tension.
7. Only 4 of 46 subjects reported an emotional reaction to the segment; 2 reported joy and one each anxiety and boredom. (Table 6)

8. 17 subjects reported visual experiences during the segment. Most frequently reported were color and light. (Table 7)
9. No subjects reported an auditory experience on this segment and only 1 reported "an odor". (Table 8)
10. Four subjects reported a kinesthetic experience: 2 floating and 2 flying. (Table 9)
11. Three subjects reported wandering thoughts; 2 reported meditative experiences or contact with spirit guides.

SOUND SEGMENT 2 - 12(600)

1. GSR changes.
 Increases: range 0-3, mean 1.3 with n=20
 Decreases: range 0-5, mean 1.8 with n=29
 9% of subjects showed their largest GSR change on this segment.
2. No subjects liked this segment best/had best experience/most potential.
3. 37% thought this segment pleasant, 13% unpleasant.
4. 15% found the segment uncomfortable, 9% comfortable.
5. 22% found it relaxing, 18% annoying and 12% stimulating, 4% found it "interesting."
6. Body sensations were most often reported in torso and head. Sensations most often noted were pressure/tension and heart beat/pulse.
7. Only 3 subjects reported emotional reactions: 2 anxiety/nervousness and 1 joy.
8. 20 reported visual experience, most often color and light.
9. 2 subjects reported auditory experiences, 1 ocean, 1 people speaking. No one reported olfactory experiences.
10. 11 reported kinesthetic experiences; 5 of these felt that they were floating.
11. 1 reported wandering thoughts, 2 strange and uneasy feelings.

SOUND SEGMENT 3 - 10(500)

1. GSR changes
 Increases: range 0-2.5, mean 1.2 with n=19
 Decreases: range 0-6, mean 1.7 with n=27
 9% of subjects showed their largest GSR change on this segment.
2. 5% liked this segment best/had best experience/most potential.
3. 37% thought this segment pleasant, 11% unpleasant.
4. 26% found this segment comfortable, only 2% uncomfortable.
5. 33% found it relaxing, 9% annoying and 2% stimulating. 7% found it interesting.
6. Body sensations were most often reported in head and torso. Sensations most often noted were tingle/twitch/jerk, pressure/tension/numbness.
7. 3 subjects reported emotional experiences, 2 joy and 1 sadness.
8. 18 reported visual experience, most often light, color and people.
9. 2 subjects reported auditory experiences, 1 a pop and 1 music. One subject reported a pleasant odor.
10. 8 reported kinesthetic experiences; 4 of these were vibration/pulsing/energy flow and 3 were push/pull experiences.
11. 2 reported wandering thoughts and 2 received a call/message.

SOUND SEGMENT 4 - 8.3(600)

1. GSR changes.
 Increases: range 0-4, mean 1.2 with n=15
 Decreases: range 0-5, mean 1.8 with n=33
 22% of subjects showed their largest GSR change on this segment.
2. 18% of subjects liked this segment best/had best experience/most potential.
3. 20% thought this segment pleasant, 17% unpleasant.
4. 17% found this segment uncomfortable, 13% comfortable.

5. 24% found it annoying, 17% relaxing and 9% stimulating. 2% found it interesting.
6. Body sensations were most often reported in head and torso. Most often noted were tingle/twitch/jerk and vibration/energy moving.
7. 5 subjects reported emotional reactions: joy, anxiety, sadness, excitement and irritation.
8. 22 reported visual experiences, most often color and natural scenes.
9. 6 reported auditory experiences: sound, music, crackling, people speaking.
10. 12 reported kinesthetic experiences; 4 swimming/swinging/rocking, 3 vibratory/energy flow, and 3 expanding/opening.
11. 4 reported mind wandering, 2 NYC energy/beta sound.

SOUND SEGMENT 5 - 7.3(500)

1. GSR changes.
 Increases: range 0-4, mean 1.2 with n=18
 Decreases: range 0-715, mean 1.6 with n=30
 22% of subjects showed their largest GSR change on this segment.
2. 22% of subjects liked this segment best/had best experience/most potential.
3. 43% of subjects found this segment pleasant, only 4% unpleasant.
4. 35% found it comfortable, only 2% uncomfortable.
5. 35% found it relaxing, only 4% annoying and 2% stimulating. 2% found it interesting and 2% difficult.
6. There were only slight differences in number of those reported body sensations in head, torso, arms, legs and other. Most often noted were tingle/twitch/jerk and heart beat/pulse.
7. 6 reported emotional reactions: 4 joy/elation, 1 anxiety and 1 sadness.
8. 20 reported visual experiences, most often color, natural scenes and abstract forms.
9. Only 1 subject reported an auditory experience (people speaking) and no one reported olfactory sensations.

10. 15 reported kinesthetic experiences 7 of these floating.
11. 5 reported meditative feelings, 5 felt energized/awakened.

SOUND SEGMENT 6 - 6.3(400)

1. GSR changes.
 Increases: range 0-10, mean 2.2 with n=16
 Decreases: range 0-3.5, mean 1.4 with n=23
 13% of subjects showed their largest GSR change on this segment.
2. 16% of subjects liked this segment best/had best experience, most potential.
3. 24% of subjects found this segment pleasant, 15% unpleasant.
4. 20% found it comfortable, 11% uncomfortable.
5. 27% found this segment relaxing, 8% annoying and 6% stimulating. 7% found it interesting.
6. Body sensations were reported most often in the head and arms/hands. Most often noted were numbness, pressure/tension, and pain/nausea.
7. 6 subjects reported emotional reactions: 2 joy and one each anxiety, sadness, excitement and irritation.
8. 18 reported visual experiences, most often color and light.
9. 5 reported auditory experiences: 3 people speaking, 2 sounds, 1 music. 1 subject reported a smell.
10. 15 reported kinesthetic sensations: 6 sleepy, 3 swimming/swinging/rocking, and 3 vibration/energy flow.
11. 8 reported an awareness, balance a feeling of taking off; 3 mind wandering.

SOUND SEGMENT 7 - 6.3(200)

1. GSR changes.
 Increases: range 0-5, mean 1.3 with n=18
 Decreases: range 0-4, mean 1.5 with n=25
 17% of subjects showed their largest GSR change on this segment.

2. 36% liked this segment best/had best experience/most potential.
3. 39% found this segment pleasant, 15% unpleasant.
4. 28% found this segment comfortable, 9% uncomfortable.
5. 33% found the segment relaxing and 4% each annoying and stimulating. 7% found it interesting. It was also identified as intriguing, boring and murky.
6. Body sensations were most often reported in the torso and head. Most often noted were heat, pressure and tingle/twitch/jerk.
7. 7 reported emotional reactions, 4 of them joy/elation.
8. 24 noted visual experiences, most frequently color and natural scenes.
9. 1 reported an auditory sensation (radio signal) and one an olfactory (water).
10. 9 reported kinesthetic sensations: 4 floating, 2 swimming/swinging/rocking.
11. 8 made additional positive statements about the signal; 2 reported mind wandering.

COMPARISON OF THE 7 SEGMENTS

1. GSR.
Segment 6 showed the largest GSR change and the largest average change among subjects. There were more negative than positive shifts on all segments except 1. Polarity shifts were shown on 6 and 7.
2. More subjects identified segment 5 as pleasant (43%) than any other segment. Segment 7 was second (39%).
3. More subjects identified segment 5 as comfortable (35%) than any other segment. Segment 7 was second (28%).
4. More subjects identified segment 5 as relaxing (35%) than any other segment. Segments 3 and 7 were second (33%).
5. Segment 4 was most often identified as annoying (24%) with segment 1 second (21%).
6. Segments 1 and 2 were identified most often as stimulating (15% and 12%).
7. Segments 1 and 2 created more body sensations than other segments.

8. Segment 7 produced more emotional reactions, with segments 5 and 6 next.
9. Segments 7 and 5 produced most visual sensations. Subjects reported sensations of color on segment 7, sensations of light on segment 3, natural scenes on 5 and 7, abstract forms on 5, and physical objects on 7.
10. Segments 4 and 6 produced most auditory sensations. No segments produced many olfactory sensations.
11. Kinesthetic sensations were most often produced on segments 5 and 6. The most frequent sensations of floating were on segments 5, 2, and 7; of vibrations on 3; of swimming/swinging/rocking on 4; and of sleepiness on 6.
12. As the hertz differential dropped from high alpha to medium alpha to low alpha to high theta to medium theta (as they did on the series of signals), and the sound frequencies dropped gradually from 800 to 200, we moved into conditions more likely to create altered states. In general, subjective reports became more positive in the sense of being more relaxing, pleasant and comfortable, less body oriented, more productive of visual and kinesthetic sensations.
13. Most important to remember, however, is the fact that individuals did vary considerably in their reactions to individual segments, suggesting the value of customizing Hemi-Sync signals for individuals.
14. Three lab subjects requested that their favorite sound segment be added to the usual Hemi-Sync signal being sent them. This experience was negative in all cases, undoubtedly because of the increased hertz differential.
15. During the Professional Seminar in October, the participants were administered the test tape in their CHEC units. After each sound segment, they were asked to fill out a check list (see Appendix) to indicate their reaction to the segment. Although this experience was somewhat different from the more free-flowing experience in the lab, the responses from the seminar participants were compared with the original 46 subjects. For four of the participants, this was their second test. The 11 new subjects did not differ from the first sample on segment preference; percent finding the segment pleasant, comfortable, relaxing; on body sensations or emotional reactions; nor on imagery.
16. First and second tests of the four repeating subjects were compared in order to estimate reliability over time. Two of the four had the same overall segment preference. When all of the possible ratings on the form shown in the Appendix were compared for the seven segments, only 8% of the ratings were in agreement.

TABLE I

GSR CHANGES

<u>SEGMENT</u>	<u>INCREASES</u>			<u>DECREASES</u>		
	<u>N</u>	<u>RANGE</u>	<u>\bar{X}</u>	<u>N</u>	<u>RANGE</u>	<u>\bar{X}</u>
1	26	0-5	1.8	20	0-4	1.5
2	20	0-3	1.3	29	0-5	1.8
3	19	0-2.5	1.2	27	0-6	1.7
4	15	0-4	1.2	33	0-5	1.8
5	18	0-4	1.2	30	0-7.5	1.6
6	16	0-10	2.2	23	0-3.5	1.4
7	18	0-5	1.3	25	0-4.5	1.5

TABLE 2

GSR CHANGESPERCENT OF SUBJECTS SHOWING LARGEST CHANGES DURING EACH SEGMENT

N-46

<u>SEGMENT</u>	<u>% OF SUBJECTS*</u>
4	22%
5	22
7	17
6	13
1	9
2	9
3	9

* Additionally, 3 subjects showed similar changes on all segments.

TABLE 3

PERCENT OF SUBJECTS SHOWING PREFERENCE FOR VARIOUS SEGMENTS *

N of Ratings - 50

<u>SEGMENT</u>	<u>% OF SUBJECTS</u>
7	36%
5	22
4	18
6	16
3	6
1	2
2	0

* Liked best, had the best experience, had most potential for positive experience.

TABLE 4

EXPERIENCES CHARACTERIZED BY SUBJECTS ON EACH SOUND SEGMENT

N-46

% OF SUBJECTS

	<u>SEGMENT 1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
Pleasant	26%	37%	37%	20%	43%	24%	39%
Unpleasant	30	13	11	17	4	15	4
Neutral	13	17	13	15	15	7	9
No Response	30	33	39	48	37	54	46
Comfortable	15	9	26	13	35	20	28
Uncomfortable	20	15	2	17	2	11	9
Neutral	7	4	4	13	9	7	7
No Response	59	72	67	57	54	63	57
Relaxing	19	22	33	17	35	27	33
Annoying	21	18	9	24	4	8	4
Stimulating	15	12	2	9	2	6	4
Neutral	6	4	4	9	4	8	2
No Response	40	44	52	41	54	50	55
Interesting	0	4	7	2	2	7	7

TABLE 5

BODY SENSATIONS IDENTIFIED IN EACH SEGMENT

N-46

<u>SEGMENT</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>BODY PART IDENTIFIED</u>							
On/In head	14	10	13	13	7	11	6
Torso	11	12	6	8	7	4	10
Arms/hands	6	5	3	2	6	5	3
Legs/feet	4	5	2	2	5	3	2
Other(skin,blood, bones)	2	5	1	1	5	4	4
<u>BODY SENSATION IDENTIFICATION</u>							
Heat	3	3	3	1	3	3	3
Cold	1	3	1	2	1	1	1
Pressure/tension	9	5	4	-	1	4	3
Vibration/pulsing/energy moving	5	3	2	4	2	3	2
Numb/heavy	5	3	4	1	2	6	-
Pain/nausea	2	-	-	2	4	4	-
Heart beat/pulse	4	5	1	3	5	1	1
Tingle/twitch/jerk/prickle/flutter	10	3	6	5	7	3	3

TABLE 6

EMOTIONAL REACTIONS IDENTIFIED IN EACH SEGMENT

N-46

<u>SEGMENT</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>EMOTION</u>							
Joy/elation	2	1	2	1	4	2	4
Anxiety/fear	1	2	-	1	1	1	1
Boredom	1	-	-	-	-	-	-
Sadness	-	-	1	1	1	1	-
Excitement/surprise	-	-	-	1	-	1	1
Aggression/Irritation	-	-	-	1	-	1	1

TABLE 7

VISUAL EXPERIENCES NOTED IN EACH SEGMENT

N-46

VISION	SEGMENT	<u>NUMBER OF SUBJECTS REPORTING</u>						
		1	2	3	4	5	6	7
Color		6	7	4	4	8	6	10
Light		4	5	9	3	-	6	4
People		1	4	4	1	4	3	4
Natural Scenes		1	3	3	4	5	1	5
Animals		-	3	-	1	-	2	1
Physical objects		3	3	3	1	2	1	4
Movement		1	2	2	-	3	2	3
Self		-	-	-	2	1	1	-
Other		-	-	1	1	-	-	2
Abstract forms		1	2	1	3	5	3	3

TABLE 8

AUDITORY AND OLFACTORY EXPERIENCES IN EACH SEGMENT

N-46

<u>AUDITORY</u>	SEGMENT	<u>NUMBER OF SUBJECTS REPORTING</u>						
		1	2	3	4	5	6	7
People speaking		-	1	-	1	1	3	-
Music		-	-	1	1	-	1	-
Other		-	1	1	4	-	2	1
<u>OLFACTORY</u>								
Odor/smell		1	-	1	-	-	1	-
Other		-	-	-	-	-	-	1

TABLE 9

KINESTHETIC EXPERIENCES IN EACH SEGMENT

N-46

SEGMENT	<u>NUMBER OF SUBJECTS REPORTING</u>						
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
<u>KINESTHETIC SENSATION</u>							
Floating	2	5	-	2	7	1	4
Vibration/pulsing/ energy flow	-	-	4	3	1	3	1
Expansion/opening	-	1	1	3	2	-	1
Push/pull/lift	-	2	3	-	3	-	1
Flying	2	2	-	-	-	2	-
Swimming/swinging/ rocking	-	1	-	4	1	3	2
Sleepy	-	-	-	-	1	6	1

Test Tape Excerpt # _____

Subject _____
(Initials)

Pleasant _____ Unpleasant _____ Neutral _____

Relaxing _____ Annoying _____ Stimulating _____ Neutral _____

Comfortable _____ Uncomfortable _____ Neutral _____

Body Sensations (Specify):

Emotional Reactions (Specify):

Imagery

Visual (Specify):

Auditory (Specify):

Olfactory (Specify):

Kinesthetic (Specify):

Other Mental Activity: